

Claims

[c1] What is claimed is:

- 1.A probe holder for holding a testing probe, the probe holder comprising:
 - a body;
 - an air inlet positioned on the body, for inputting an air flow;
 - a first airway embedded in the body and connected to the air inlet at a first opening of the first airway for providing a conduit for the air flow;
 - a second airway embedded in the body and connected to a second opening of the first airway at a fourth opening of the second airway;
 - a vacuum cup positioned on the body and connected to a fifth opening of the second airway, the vacuum cup adapted for contacting a surface to provide suction at the surface;
 - an air outlet positioned on the body and connected to a third opening of the first airway for venting the air flow; and
 - a holding portion installed on the body for holding the testing probe.

- [c2] 2.The vacuum probe holder of claim 1 wherein the second airway is connected to the first airway with an angle such that the air flow through the first airway generates a low pressure condition in the second airway and in the vacuum cup.
- [c3] 3.The vacuum probe holder of claim 2 wherein the angle of the second airway to a direction of the air flow through the first airway flowing past the second airway is equal to or larger than ninety degrees.
- [c4] 4.The vacuum probe holder of claim 1 wherein the first and the second airways are tubes.
- [c5] 5.The vacuum probe holder of claim 4 wherein an inner diameter of the air inlet being larger than an inner diameter of the first airway.
- [c6] 6.The vacuum probe holder of claim 4 wherein an inner diameter of the second airway is smaller than an inner diameter of the first airway.
- [c7] 7.The vacuum probe holder of claim 1 wherein the air outlet is capable of being blocked by a finger to modify outflow of the air flow from the air outlet.
- [c8] 8.The vacuum probe holder of claim 1 further comprising an air outlet actuator installed on the air outlet for

controlling the outflow of the air flow from the air outlet.

- [c9] 9.The vacuum probe holder of claim 1 wherein the body is made of a non-metallic material.
- [c10] 10.The vacuum probe holder of claim 1 wherein the body is made of a non-magnetic material.
- [c11] 11.The vacuum probe holder of claim 1 wherein the holding portion is a receiving space in the body for inserting the testing probe.
- [c12] 12. A probe holder for attaching a testing probe onto a surface, the probe holder comprising:
 - a body;
 - a first airway formed within the body and extending along a first axis, the first airway having an air inlet, an air outlet, and a midpoint opening, the midpoint opening formed between the air inlet and the air outlet;
 - a second airway formed within the body and extending along a second axis, the second airway communicating with the first airway through the midpoint opening, the second airway having a surface opening formed on the body surface, an angle between the first axis and the second axis being less than or equal to ninety degrees;
 - and
 - a vacuum cup disposed around the surface opening, the

vacuum cup having an inner space communicating with the second airway through the surface opening; wherein when an air flow is flowing from the air inlet toward the air outlet, the air flow draws air from the second airway through the midpoint opening so that the air pressure of the inner space of the vacuum cup is reduced to attach the testing probe onto the surface.

- [c13] 13.The probe holder of claim 12 wherein an inner diameter of the second airway is smaller than an inner diameter of the first airway.
- [c14] 14.The probe holder of claim 12 wherein the diameter of the air outlet dimensioned to be substantially blocked by a finger, so that the outflow of the air flow from the air outlet being substantially reduced when the air outlet being blocked by the finger.
- [c15] 15.The probe holder of claim 12 further comprising an air outlet actuator installed on the air outlet for controlling the outflow of the air flow from the air outlet.